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59

BRIDGE STREET BYPASS IN SALEM AND BEVERLY: TRAFFIC FORECASTS

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CTPS TECHNICAL REPORT 59

TITLE BRIDGE STREET BYPASS IN SALEM AND BEVERLY:

TRAFFIC FORECASTS

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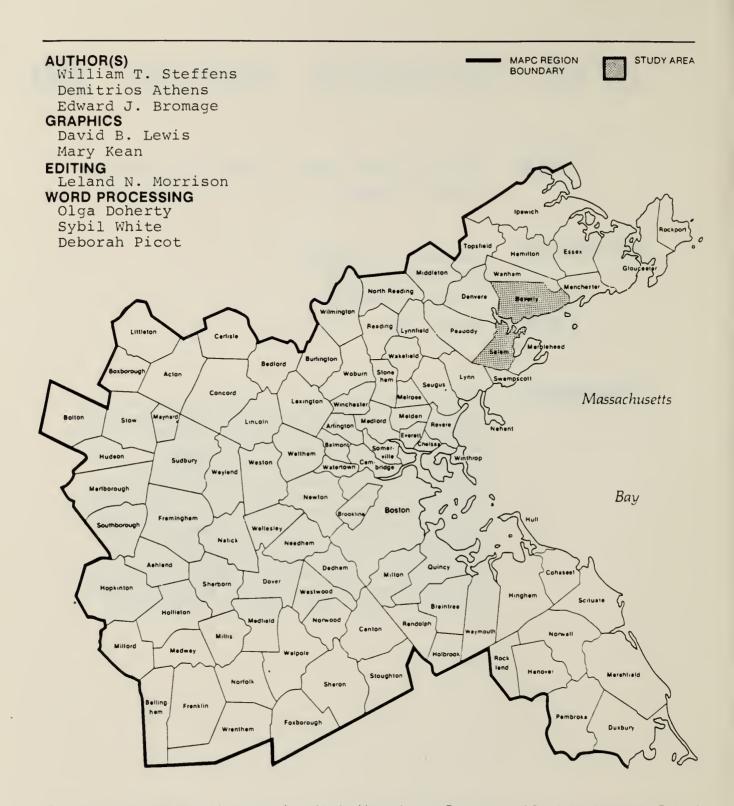
DATE APRIL 1987

ABSTRACT

Traffic-volume forecasts for the AM and PM peak hours in 1985 and 2005 have been produced for the Bridge Street bypass. A 1985 baseline trip table was developed from an extant trip table that was adjusted to achieve consistency between observed volumes and traffic assignments. The baseline trip table was factored to 2005 using the Fratar procedure, for which household and employment projections reported by the Metropolitan Area Planning Council served as a basis. The 1985 and 2005 trip tables were assigned to the Bridge Street bypass network in the final step of the process.

This document was prepared by CENTRAL TRANSPORTATION PLANNING STAFF, an interagency transportation planning staff created and directed by the Metropolitan Planning Organization, consisting of the member agencies.

Executive Office of Transportation and Construction
Massachusetts Bay Transportation Authority
Massachusetts Department of Public Works
MBTA Advisory Board
Massachusetts Port Authority
Metropolitan Area Planning Council



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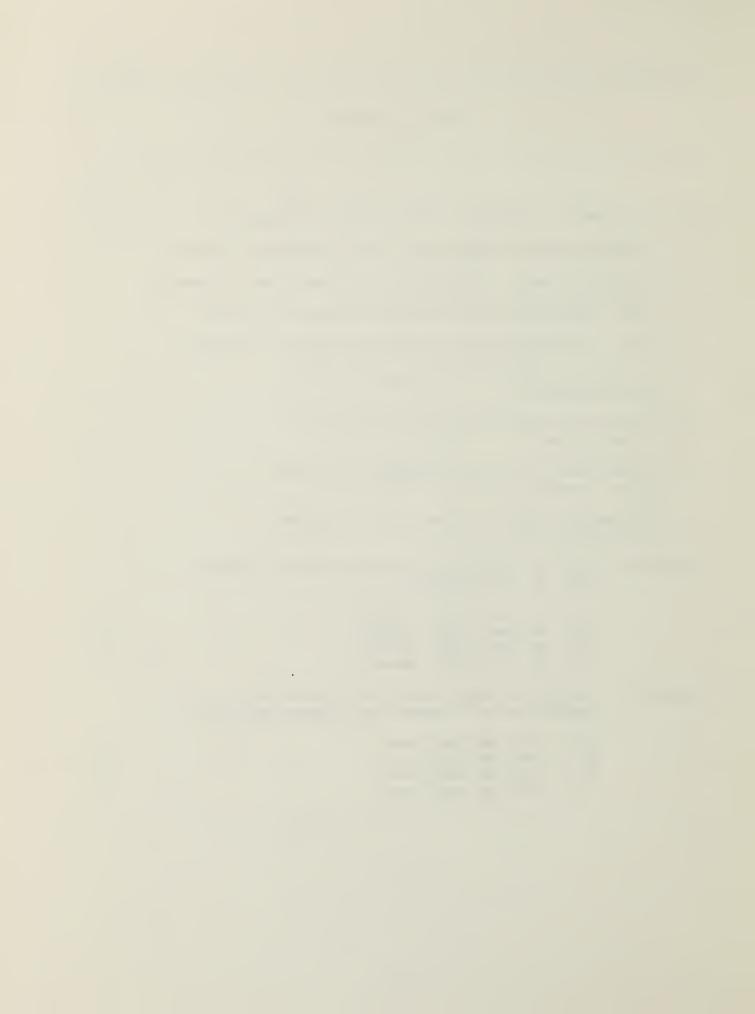
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1 INTRODUCTION

1.1 BACKGROUND

As originally proposed by the Massachusetts Department of Public Works (MDPW), the Peabody-Salem Connector was intended to join the Salem-Marblehead area with Route I-95 north in Peabody. The Beverly-Salem component of the proposal was viewed as a link in a system of expressway-scaled connectors which were to remove traffic from overloaded local streets.

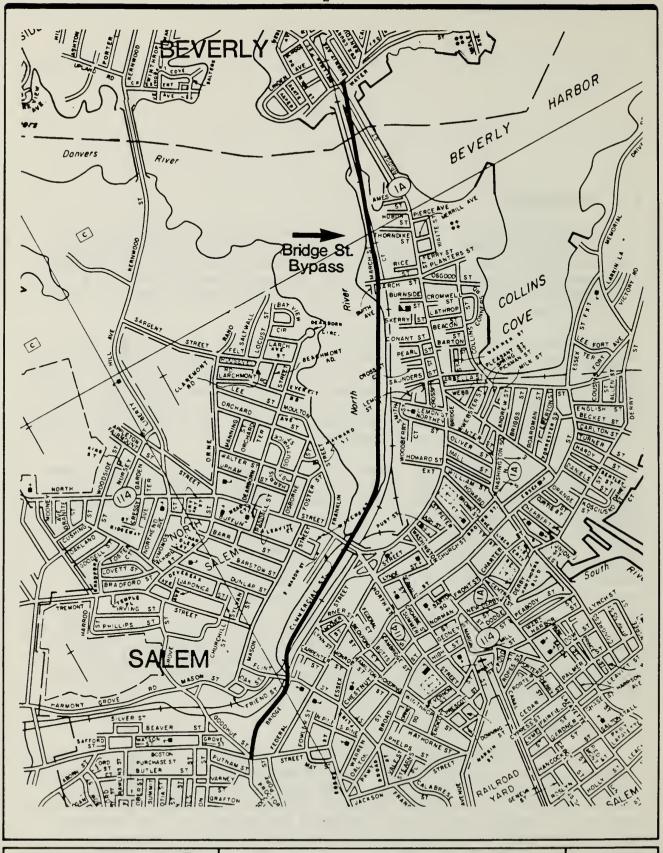
The decision not to construct I-95 north led the Boston Transportation Planning Review to develop an alternative plan for the Beverly/Salem area. An arterial-scaled Beverly-Salem bridge and Bridge Street bypass in Salem would join North Street in Salem to Cabot and Rantoul streets in Beverly. A Peabody-Salem connection would link North Street to Route 128 between the Route 114 and Lowell Street interchanges.

The presentation of these plans for public review and comment eventually resulted in the elimination of the largest portion of the project—the Peabody-Salem connection. In Peabody, there was citizen opposition to the location of an at-grade facility near the center of Peabody and concern about the fact that a large share of the project mileage to be built would be through Peabody. This led first to a revision in the MDPW construction schedule and finally to the elimination of the Peabody-Salem segment from further consideration.

CTPS produced traffic forecasts for the originally proposed Peabody-Salem Connector in 1977-1978. These forecasts were revised in 1981 and 1982 to allow for the effects of staged construction. At that time CTPS produced design-year 1985 and 2000 PM-peak-hour forecasts.

1.2 PURPOSE

The MPDW is now preparing for the construction of a Bridge Street bypass which begins at the intersection of Bridge, Boston, and Goodhue streets in Salem, runs parallel to Bridge Street (Route 1A) on the northern side of Bridge, and ends at the intersection of Cabot and Rantoul streets in Beverly. The project study area and the alignment of the bypass are shown in Figure 1-1. The objective of the CTPS effort documented in this report was to produce 1985 and 2005 AM- and PM-peak-hour traffic forecasts for this new project, which is no longer part of a larger Peabody-Salem connector project.



Bridge St. Bypass in Salem & Beverly



Technical Report 59 April 1987 STUDY AREA
AND
BRIDGE STREET BYPASS ALIGNMENT

CTPS

FIGURE

2 METHOD

2.1 HIGHWAY NETWORK

The first step of the traffic-forecasting process was to verify the characteristics of the original computer representation of the highway network in the Peabody/Salem study area. The MDPW provided field data for this purpose, and CTPS checked roadway speeds, capacities, and direction of flow for accuracy. Minor adjustments were made to update link connections and link flow directions.

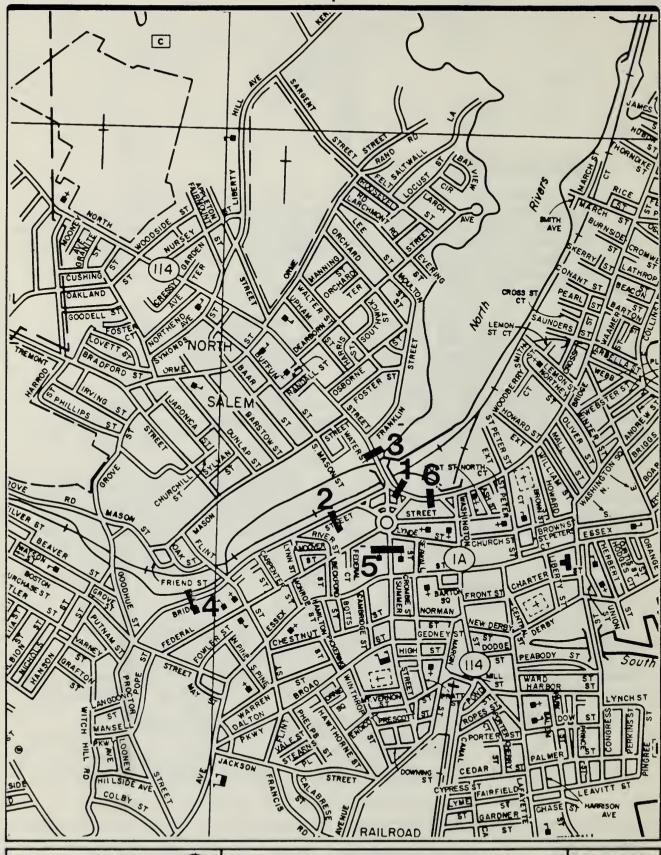
The original network was converted to a microcomputer-processible format to facilitate anticipated network editing and to make possible the use of a package of suitable microcomputer-based traffic-modeling programs. Although the 41 traffic zones in the original network were maintained, the network was modified slightly by eliminating certain details in the Route 128 area that were previously necessary for consideration of the Peabody-Salem connector. The updated network was used for modeling baseline conditions.

For the purpose of projecting current and future traffic demands on the Bridge Street bypass, the updated, baseline network was further modified. The new bypass links and planned changes in travel direction and link connections were coded into the network file to represent the bypass itself and the related transportation improvements included in the proposal.

2.2 TRAFFIC COUNTS

In February 1985, the MDPW took ten automatic-trafficrecorder (ATR) counts at six stations in Salem and four stations in Beverly; the locations are shown in Figures 2-1 and 2-2. These counts were taken for a 48-hour period beginning at 1:00 PM on a Tuesday. The ten ATR stations were located as follows:

- Salem 1. Bridge Street ramp westbound to Route 114 westbound
 - 2. Bridge Street east of River Street
 - 3E. North Street eastbound, south of Franklin Street
 - 3W. North Street westbound, south of Franklin Street



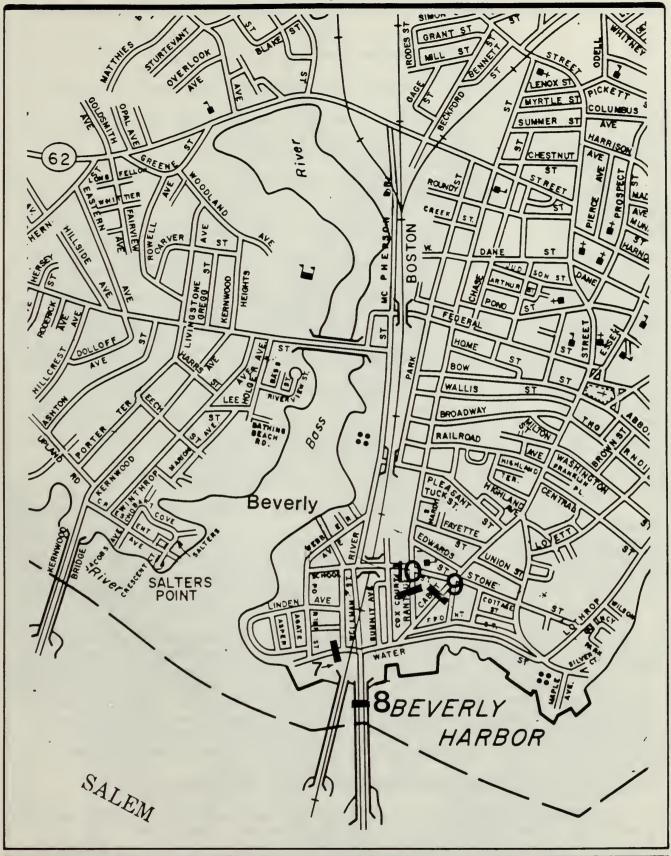
Bridge St. Bypass in Salem & Beverly

> Technical Report 59 April 1987



AUTOMATIC TRAFFIC RECORDER COUNT LOCATIONS IN SALEM

FIGURE 2-1



Bridge St. Bypass in Salem & Beverly



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AUTOMATIC TRAFFIC RECORDER COUNT LOCATIONS IN BEVERLY

CTPS

FIGURE

- 4. Bridge Street west of Flint Street
- 5. North Street between Lynde and Essex streets
- 6. Bridge Street west of Washington Street
- Beverly 7. Water Street east of Porter Street
 - 8. Route 1A at the Salem City Line (on the bridge)
 - 9. Cabot Street south of School Street
 - 10. Rantoul Street south of School Street

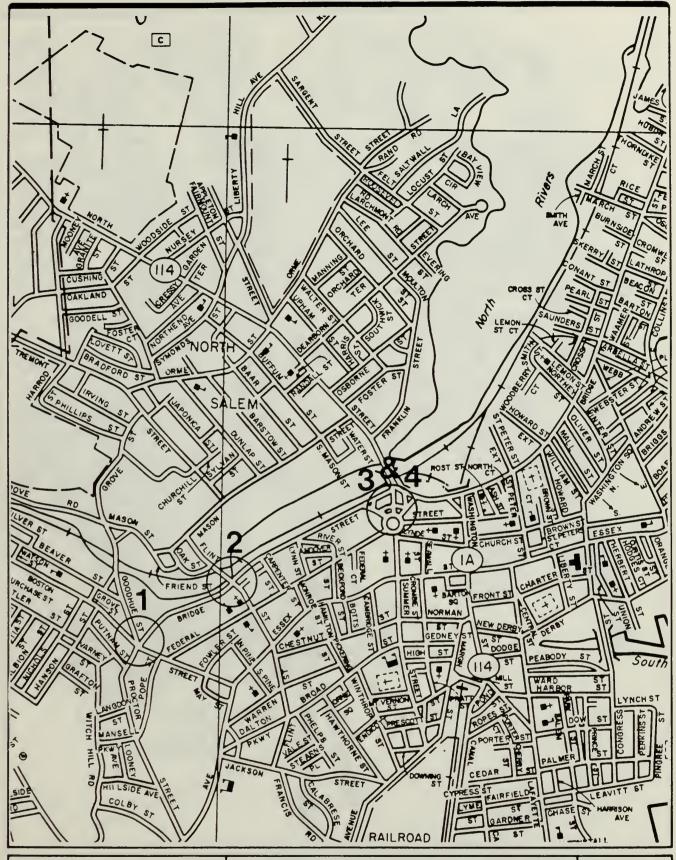
The MDPW also took 12-hour manual turning-movement counts in March 1985 at the six locations shown in Figures 2-3 and 2-4. Intersections which presently serve high volumes of traffic and where construction of the bypass could potentially alter current traffic patterns were selected for inclusion:

- Salem 1. Bridge Street at Boston, Goodhue, and Proctor streets
 - 2. Bridge Street at Flint Street
 - 3. Bridge Street at North Street
 - 4. North Street at Federal Street and Bridge Street ramps
- Beverly 5. Cabot Street at Water and Rantoul streets
 - Cabot Street at Congress Street and Essex Bridge (Route 1A)

This count data, as reported by the MDPW, was supplemented with data available from the previous work completed in 1978 and 1982. Counts from previous years were adjusted according to historical growth trends developed from MDPW-reported ATR traffic counts taken at area locations in 1978, 1982, and 1985. Because forecasts of AM- and PM-peak-hour conditions were all that were required, AM and PM peak hours were identified and these volumes were factored to reflect areawide traffic growth over the period.

2.3 AM- AND PM-PEAK-HOUR TRAFFIC-COUNT BALANCING

As noted above, the traffic data supplied by the MDPW were developed from both manual turning-movement counts and ATR counts. Because the count information was derived from different sources and the count surveys made in the two communities were taken during different weeks, there were minor inconsistencies among the reported volumes from adjacent count stations. Before



Bridge St. Bypass in Salem & Beverly

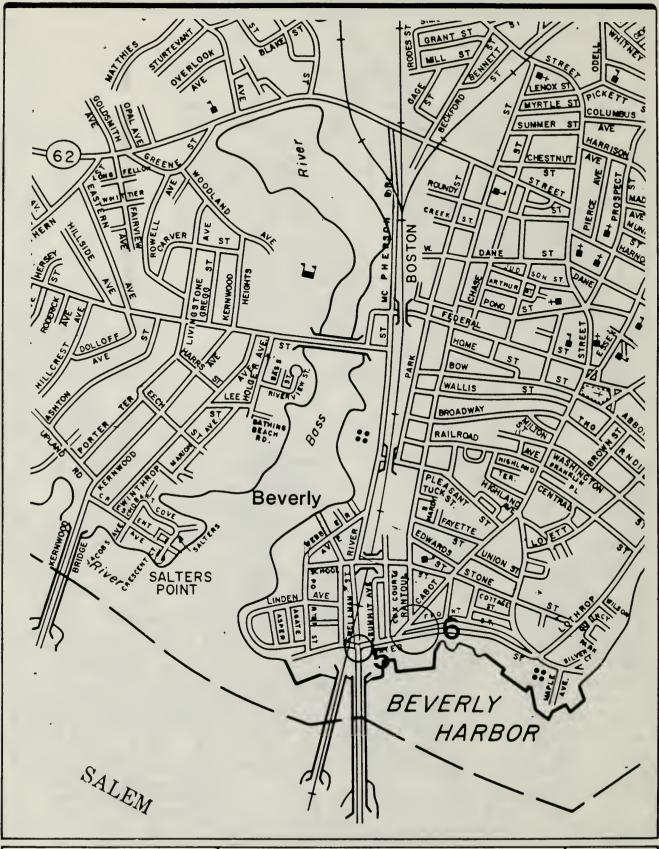


Technical Report 59
April 1987

MANUAL TURNING MOVEMENT COUNT LOCATIONS IN SALEM

CTPS

FIGURE



Bridge St. Bypass in Salem & Beverly



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MANUAL TURNING MOVEMENT COUNT LOCATIONS IN BEVERLY

CTPS

FIGURE

the reported data could be used for the intended purpose of calibrating/correcting the synthetic traffic volumes developed from the modeling process, it was necessary to eliminate these inconsistencies through a procedure commonly referred to as traffic-count balancing.

The count-balancing procedure that was used reconciles mathematically the inconsistencies within reported volumes by solving a series of simultaneous equations. All reported count data are assumed to be equally valid and are adjusted to reflect the influence of all related count information. In those instances where the differences in reported link volumes are significant and expected, due to the presence of mid-block features such as parking garages or major shopping facilities, these features are represented as individual traffic zones where traffic can be loaded onto and removed from the highway system.

The "balanced" counts which result from this process are consistent within intersections and between adjacent highway links unless a traffic zone has been connected to the network between a link pair. That is, all intersection turning movements sum to consistent entering and exiting totals, and directional link volumes at end points are equivalent. Where traffic zones are connected to the network, the expected differences in traffic volumes are preserved to the extent that permits balancing on the remainder of the network. The resulting, balanced 1985 AM- and PM-peak-hour traffic volumes finally used in the validation of the 1985 baseline-model output are presented on a schematic diagram of the 1985 network in Appendix A.



3 TRAVEL-DEMAND FORECASTS

3.1 EXISTING TRAVEL-DEMAND CONDITIONS

CTPS developed a table which represented the number of trips between traffic zones in the study area under 1985 no-build conditions. This trip table was developed from a combination of the 1985-forecast trip table produced in 1978 and the 1985 balanced traffic counts. The 1985-forecast trip table was the "seed" table in a trip-table-estimation procedure which adjusted it using observed counts as a constraint.

The procedure for adjusting or updating the seed table was based on a method defined by Van Zuylen and Willumsen in their paper, "The Most Likely Trip Matrix Estimated from Traffic Counts." This method identifies the most probable trip table that reproduces a specified set of traffic counts when assigned to a representative highway network.

The original 1985-forecast table that was used for the calibration of 1985 AM- and PM-peak-hour tables was a 24-hour trip-exchange matrix developed in 1978. Prior to calibration, the 24-hour table was converted into AM- and PM-peak-hour tables by applying the "K" factors also developed in 1978. The resulting AM- and PM-peak-hour tables were then used as seed tables for calibration purposes. The traffic-count data used in calibrating/updating the original, 1985-forecast tables were the directional traffic flows which resulted from the balancing of the turning-movement counts. Directional volumes were used in place of turning-movement volumes because the baseline network was not sufficiently detailed to include turning-movement links. That is, although turning movements were traceable on each of the subsequent networks used, links representing actual turning movements were not coded due to the limited detail of the original network. The calibration of the 1985-forecast table to observed 1985 conditions was, therefore, necessarily dependent on directional vehicle flows.

The resulting AM and PM trip tables were subsequently assigned to the baseline network. The network assignments were then compared to balanced directional count volumes to determine the validity of the model. Where assignment volumes were signif-

¹Transportation Research, Vol. 14B, 1980, p. 281.

icantly different from actual volumes, network adjustments were made and the trip table reassigned. Network adjustments included capacity, speed, and delay changes. Network modifications were successively made until satisfactory comparability existed between modeled and actual volumes.

3.2 FUTURE TRAVEL-DEMAND CONDITIONS

Future-year (2005) baseline travel demands were forecast on the basis of existing study-area trip-making characteristics and on foreseeable changes in employment and the number of households in Beverly, Salem, and the surrounding communities. To relate the changes in employment and household parameters to zonal exchanges, the Fratar technique of trip-table adjustment was used. This method involves the development of growth factors for employment and household growth which are simultaneously applied to the zonal totals of a base trip table. The trip table which results from this process is representative of the effects which long-term areawide growth trends are likely to have on future trip-making characteristics.

The growth factors applied were developed from the community-based projections of households and employment through 2005 prepared by the Metropolitan Area Planning Council. Internal-zone growth rates were developed directly from the rates projected for the host community. External-zone rates were developed by identifying communities which might contribute to changes in traffic volumes on the external link connector; these communities' effects were discounted with distance from the study area.

The employment factors for each zone were applied to the base-year trip attractions and the household-formation factors were applied to the base-year trip productions. The resulting attractions were factored to equal the productions, in order to balance the trip matrix. The attraction and production totals were distributed into each of the matrix cells according to the percentage of the total each cell represents. The resulting AM-and PM-peak-hour tables were assigned to the bypass network.

4 TRAFFIC ASSIGNMENTS

4.1 BASE YEAR (1985)

As mentioned above, the 1985 AM- and PM-peak-hour trip tables were calibrated to actual conditions on the basis of observed 1985 traffic counts. The calibrated tables were then assigned to the study-area highway network containing the proposed Bridge Street bypass. The assignment results are posted on schematic diagrams of the network in Figures 4-1 and 4-2.

AM-peak-hour and PM-peak-hour vehicle totals on the bypass are projected to be between 900 and 1,100 vehicles per hour. In Salem, most of the traffic exchange between the bypass and existing streets occurs at the North Street (Route 114) bypass interchange. In Beverly, however, there are large exchanges of traffic, which are roughly equivalent, at both the Bridge Street connector and the bypass terminus at Rantoul Street and Cabot Street. Detailed turning movements for the AM- and PM-peak-hour assignments were developed for each of the major intersections affected by the construction of the bypass; summaries of these for each of the peak-hour assignments are in Appendix B.

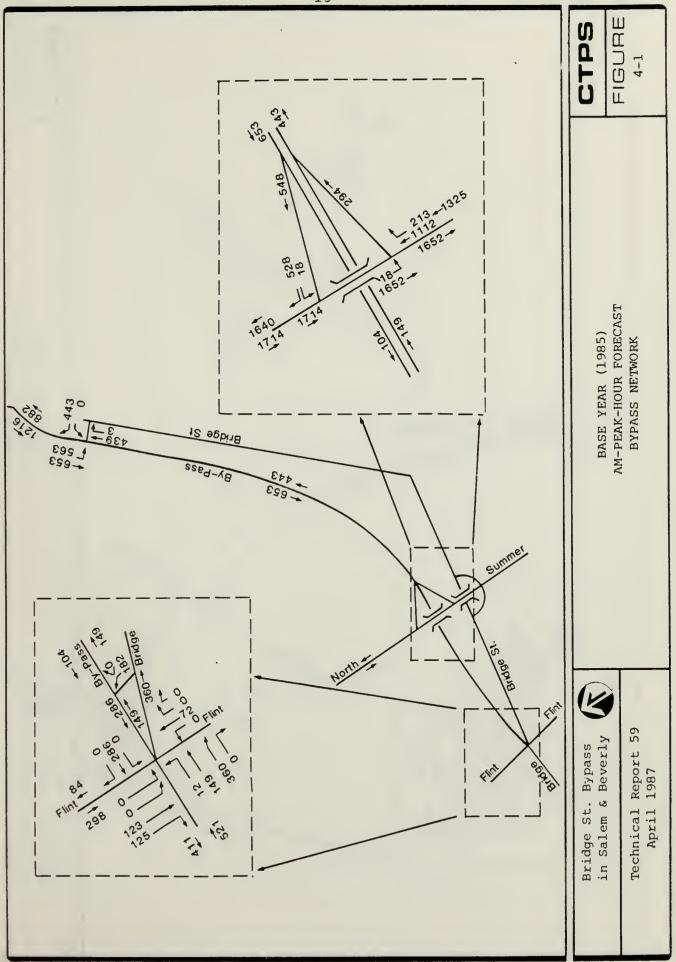
4.2 FUTURE YEAR (2005)

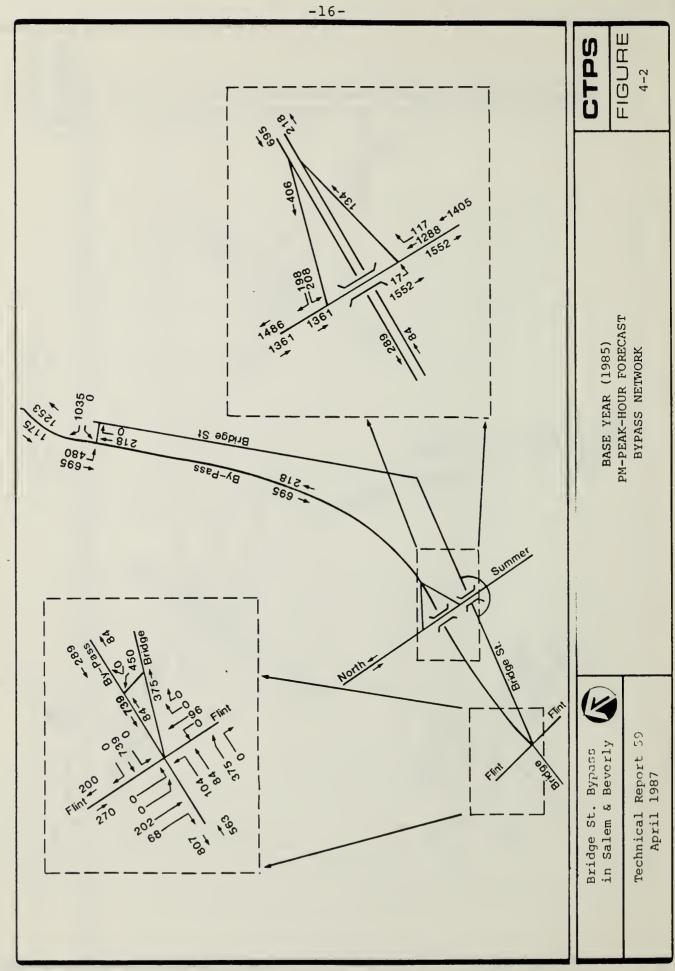
The assignment of the future-year (2005) AM- and PM-peak-hour trip tables to the Bridge Street bypass network is presented in Figures 4-3 and 4-4. Comparison of the base-year to the future-year assignments indicates that traffic volumes will not grow significantly over the 20-year forecast period. PM-peak-hour volumes on the bypass in 2005 are expected to be in the 1985 range of approximately 900 vehicles per hour. AM-peak-hour volumes on the bypass in 2005 are also expected to be in the range of the 1985 assigned volumes, at approximately 1,100 vehicles per hour.

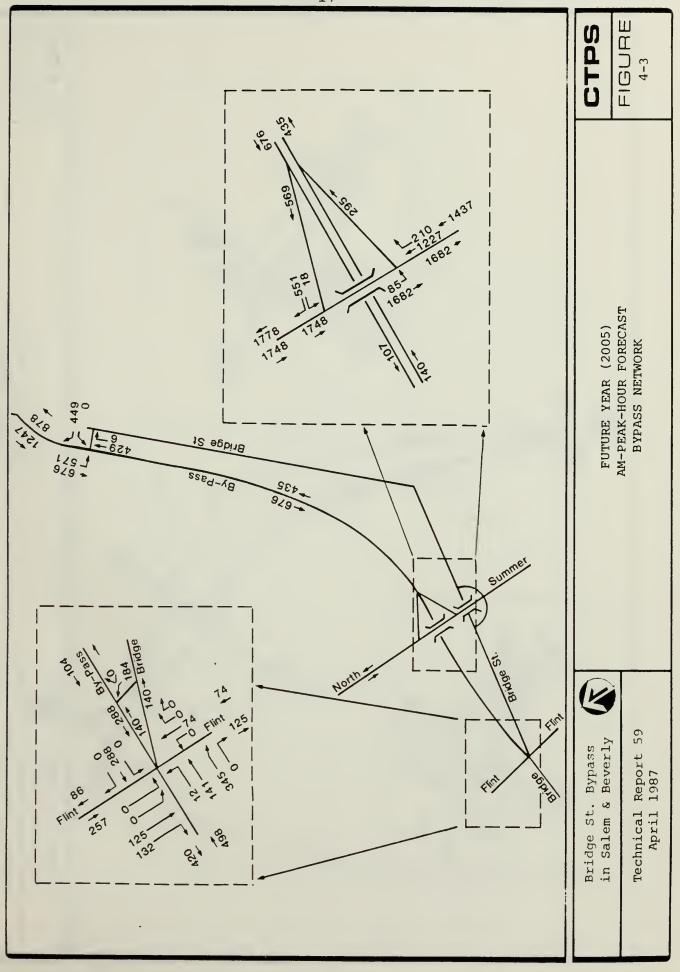
Turning-movement volumes were also plotted, for the 2005 AM-and PM-peak-hour assignments. Summaries of these for each of the major study-area intersections are in Appendix B.

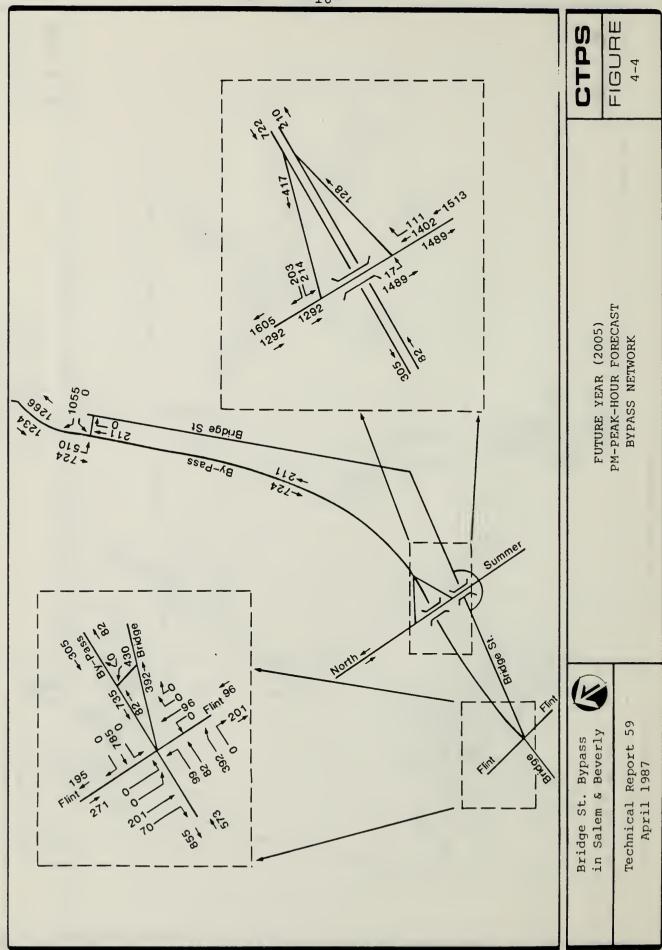
The reason for the relative stability in the volumes projected over the 20-year period is that the Beverly/Salem area is for all practical purposes fully developed. Large-scale redevelopment of the area that would generate significant increases in employment or population is not expected. The anticipated small

increases in traffic volume result primarily from an increase in the total number of households caused by the continuing decline in average household size expected for the future in the study area and the surrounding region.





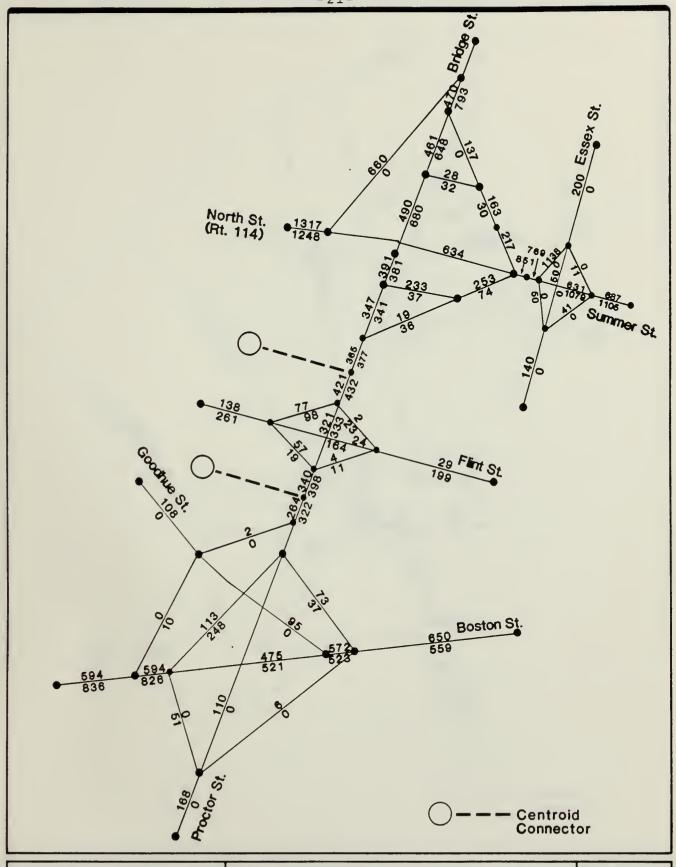




APPENDIX A

1985 AM- and PM-Peak-Hour Balanced Volumes Used in Calibration

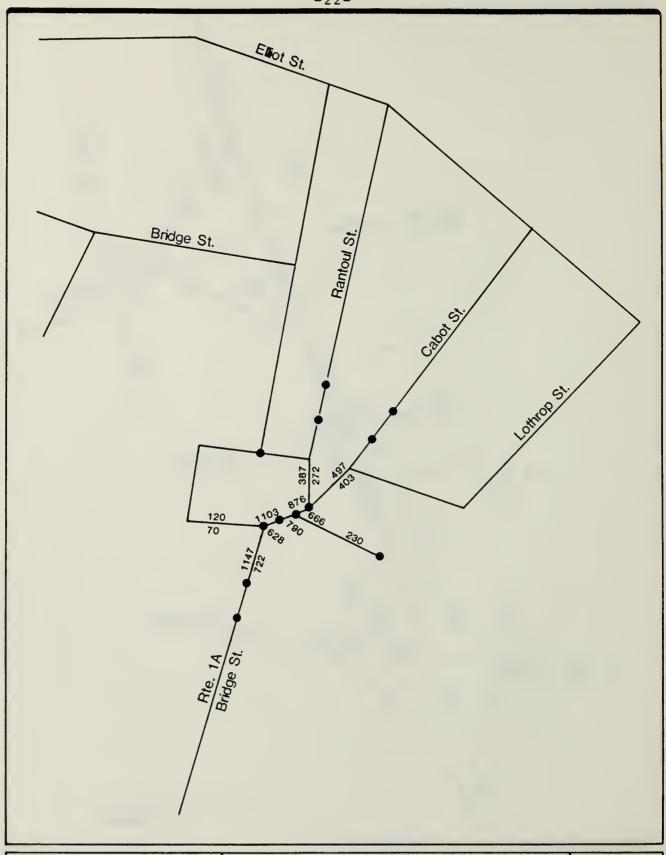




Bridge St. Bypass in Salem & Beverly

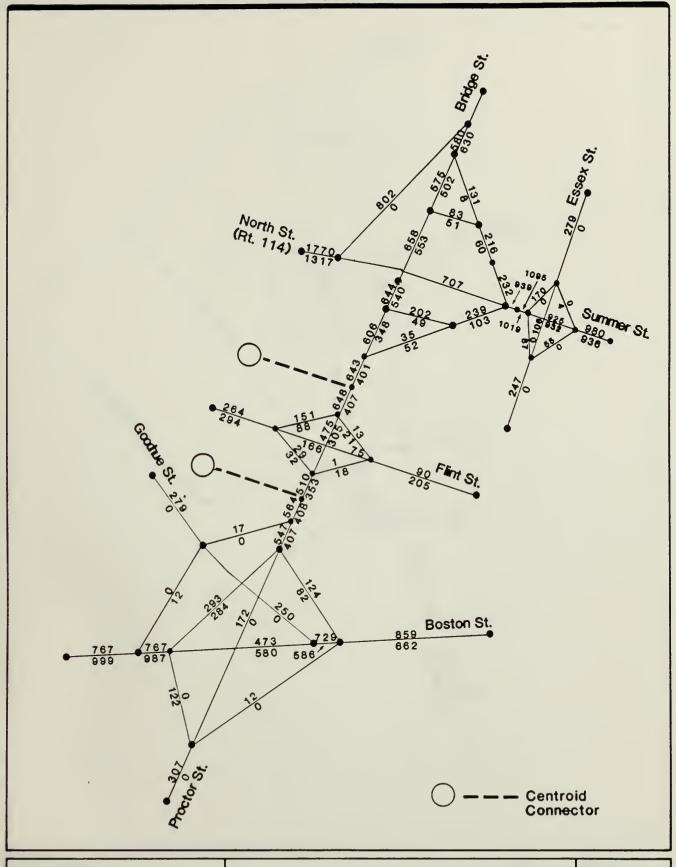
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1985 AM-PEAK-HOUR BALANCED VOLUMES SALEM CTPS



Bridge St. Bypass in Salem & Beverly

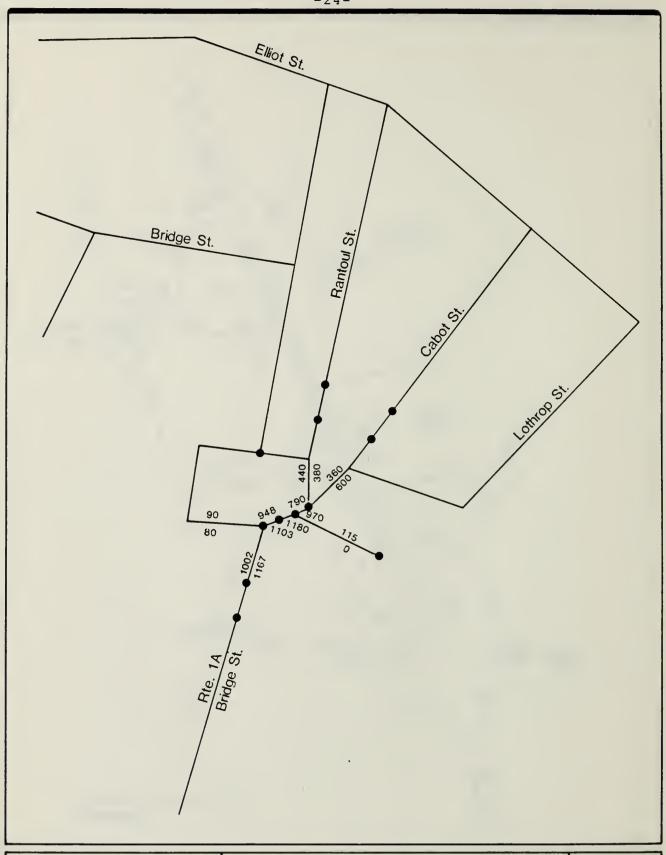
Technical Report 59 April 1987 1985 AM-PEAK-HOUR BALANCED VOLUMES BEVERLY CTPS



Bridge St. Bypass in Salem & Beverly

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1985 PM-PEAK-HOUR BALANCED VOLUMES SALEM CTPS



Bridge St. Bypass in Salem & Beverly

Technical Report 59 April 1987 1985 PM-PEAK-HOUR BALANCED VOLUMES BEVERLY CTPS

APPENDIX B

AM- and PM-Peak-Hour
Turning-Movement Summaries
by Intersection
for
1985 and 2005
(Bypass Network)



B-1

1985

AM Peak Hour



Traffic Simulation Model Turning Movement Summary

Community	Salem						
Intersection:	Federal a	Federal at Summer					
Year: 1985 Time	Feriod: AM Fea	k hr S	cenario:		Build By-Fass		
			-				
Name: Summer *		[72]		*			
*			890	*			
* *	192 927	0		* *			
************	: :	•		. * Name:	Federal		
		·.		• • • •	150		
203 .		•		• • • • • • •	11 161		
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[80]	•			•	[109]		
0	•			•			
0 0	••••	•	•		. 0		
0	•	•••	•	•			
*****************	·.	•	•	. ******	*****		
Name: Federal * *		0	740	· *			
*			740	*			
*		[71]		* Name:	Summer		

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

		51	ummary		
Community	Salem				
Intersection		mer at B	ridge St.		
Year: 1985	Time Perioc	i: AM Fe	ak hr	Scenario:	Build By-Pass
Name:	ramp *		[221]	4707	*
	*	1651		1323	*
	* * 561 * •	1090	. 0		* * . *
**********	* . ******	•	•		. * Name: Summer
		•	•		507
561	•	•	•		0 507
					0
[60]	•				£ 59:
	···········				
28	0		•	:	· · 7;
	28 *******		•	•	
	* .		•	•	*
Name:	Summer * . * *		0	816	* 73 * *
	* *	1118		889	*
	*		[72]		* Name: ram
			L / Z J		

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community	Salem					
Intersections		Bridge at North St				
Year: 1985 Tim	e Period:	AM F	eak hr	Scenario:		Build By-Fass
			[235]			
Name: North St	* *	1733		1112	* *	
	* *				* *	
	* () * .	1652	81		*	
*******	* .					e:By-Fass of rp
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· 0 0	· • • • •					294
•			•	•		
O	* •		• .		• ****	****
Name:	* . * .			•	. * . *	
	*		0	1112	213 * *	
	^ * *	1652		1325	*	
	*	1002		1020	* Name	e: North St
			[221]			

Traffic Simulation Model Turning Movement Summary

Community	S	alem						
Intersection	on :	Bridge at ramp #2						
Year: 1985	Time P	eriod:	AM Pea	ak hr	Scenario:		Build	By-Fas:
				[0]				
Name:	* * *		Ö		o	* * *		
	*	•	•	•		* *		
******	* *******		•	•		. * Name: .*****	***** O	
49			•	•		•••••	49	55:
							504	
[58]	·····	•				·		[18
762	759	••			:			8 3.
****	3 ********			•	•	. *****	****	*****
Name:	Bridge * * * * *	•		0		* * * 73 * * *		
	*		507	[59]	73	* * Name:		ramp #

Traffic Simulation Model Turning Movement Summary

Community	Salem		_				
Intersection:	Br	idge at	ramp #3				
Year: 1985 Time	Period:	AM Pea	ak hr	Scenario:	Miller atoms	Build By-Fass	5
			[0]				
	+ -	0		0	*		
•	+	O .		· ·	*		
	· O	0	o		*		
	€ . € .	. •	•		. * . * Name	e: Bridge	e
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Name: Bridge					*		
	¥ €		160	Ç	400 * *		
	+			=	*		
	+ +	28		560		e: ramp #:	3
			[60]				

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community		Salem						
Intersecti			 Flint at	Pride				
Year: 198	35 Time	Feriod:	AM Feak	hr	Scenario:		Build	By-Pass
Name:	Flint *			[132]				
wame.	*		248		84	*		
	*					*		
	*					*		
	*		123	0		*		
	*	•	•	•		. * Name:		Ev-Ence
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		•						
[146]		•				•		[227]
		•				•		
	12							
521	509							509
J2.1	507111	• • • •		•			•	
	0	•		•	•			
******	******	•		•	•	. *****	*****	******
	*	•		•	•	*		
Name:	Bridge *	•		0	•	0 *		1
	*			U	72	*		
	*					*		
	*		123		72	*		
	*					* Name	:	Flin
				[147]				

Traffic Simulation Model Turning Movement Summary

Commun	ity:	Salem						
Inters	ections	F'1	octor at	Boston				
Year:	1985 Time	Feriod:	AM Feak	hr	Scenario:		Build	By-Fass
		•			•			
Name:	Bridge *			[146]		*		
radine:	# *		410		522	*		
	*					*		
	*	85	243	82		*		
	*	•	•	•		. *		
*****	* **********		•	•		. * Name		Boston *****
		•	•	•			0	
		•	•	•				
929		•	•	•			B44	1117
							273	
		•				•		
[116]		•				•		[115]
		•				•		
	522							
1119	597	• • • •		•	•	•		6 79
				•	•	•		
	Ů			•	•			
****	**************************************	•		•	•	. *****	*****	******
Name:	Boston *	•			•	*		
	*			0	0	0 *		
	*					*		
	*		516		O	*		.
	*			[152]		* Name	•	Froctor

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community	Salem		·		
Intersection:	Bo	ston at G	oodhue		
Year: 1985 Time	Period:	AM Feak	hr	Scenario:	Build By-Fass
Name: Goodhue * * * *		0	134]	99	. * * *
************************	•		•		. * . * Name: Boston .************************************
B32 .		:	·		832 931 0
0	•				. [116]
0 ******			•	:	. ***********
Name: Boston * * * * * * * * * *		o [03	:	. * . * . * . * . * . * . * . * . * . *

Traffic Simulation Model Turning Movement Bummary

Community	Salem		_			
Intersection:	Bridge at B	ridge St.	. By-Pass			
Year: 1985	Time Period	: AM Pe	ak hr	Scenario:	Bu	ild By-Pass
				•		
			[234]			
Name: By-Pass	I.B. *		12341		*	
	*	104		0	* ,	
	*				*	
	* 104 * -	0	Ō		*	
	* .	•	•		. * Name: I	By-Pass O.B.
*******	*****	•	•			******
					• • • •	0
005	•	•				
285	•	•	•			0 0
					• • • •	0
	•				•	
[227]	•				•	[228]
	0					
508	148			•	•	148
			•	•	•	
	360		•			
********	*****		:		. *******	******
Name: By	-Pass * .				. *	
	*		181	0	0 *	
	*				*	
	*	360		181	* * Name:	Bridge St
	*		[148]		* Name:	Bridge St

Prepared bysejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

				_				
Communi	tyı		Salem					
Interse	ctions	By-Pa	ss off	ramp at	North St.			
Year:	1985	Time	Period	d: AM Fe	ak hr	Scenario:	 E	duild By-Fass
Name:	North	St. *		1710	[103]	1/10	*	
		* * *	0	1714	o	1640	* * *	
****	***** **	* ****		:	•	·		3y-Fass offrp ***********************************
0		•	•	:	•		••••	0 546
[0]		o	•					£233:
o	•	0	••••		· ·	:		. (
*****	******	O *****	•		•	•	. ******	******
Name:		* * *			0	1112	· * · * · * · *	
		*		1732	[235]	1112	* * Name:	North St

Traffic Simulation Model Turning Movement Summary

Community:	Beverly			
Intersections	By-Pa	ss at Bridge St.		
Year: 1985	Time Feriod:	AM Feak hr	Scenario:	Build By-Pass
		[232]		·
Name: By-Fass	S.B. * * *	o	65 3	* * * * *
,	* ° .		•	* * Name: By-Fass
*****	****** .	•	•	* MUME: DY-L022
	·	· · · ·		653
0	•		• • •	0 1216
				563 •
[229]	•		. •	[230]
	o•		·	
442	439	•.	:	
	3	•	• •	
******	****** .	•		*************
Name: By-Fass	*	•	· · · · · · · · · · · · · · · · · · ·	
	* * *	566	443	* *
	*	[231]		* Name:Bridge St con

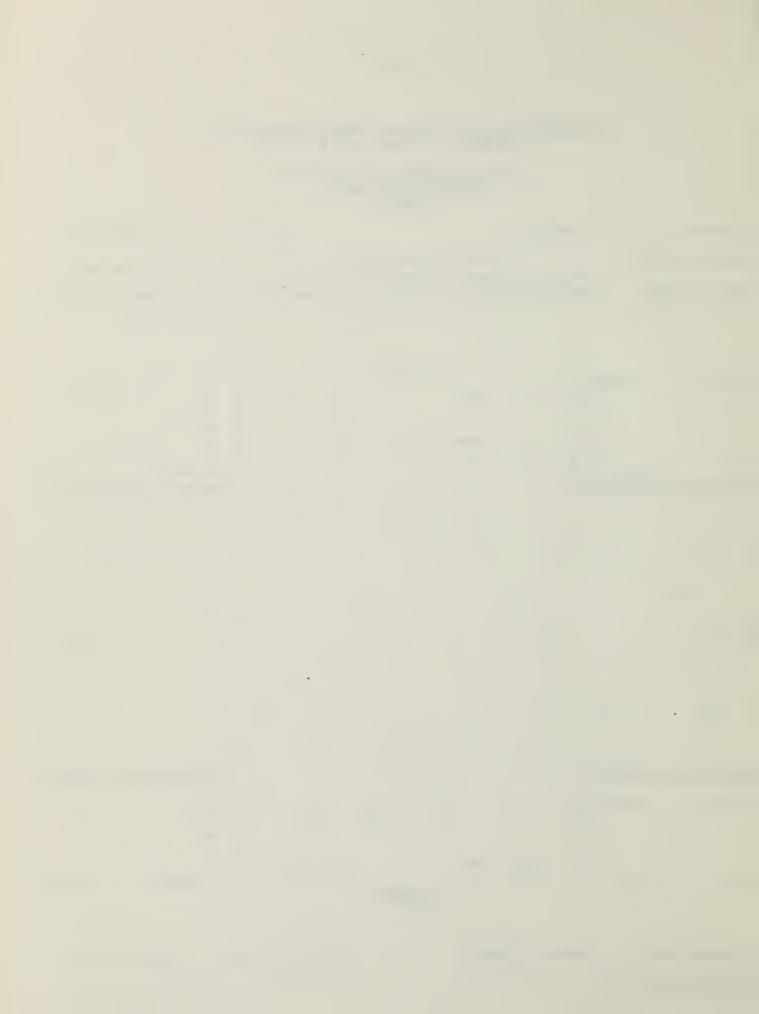
Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community		Beverly					
date date				on den den			
Intersection			Bride	ge at Cobo	t 		
Year: 1985	Tim	e Perio	d: AM F	Peak hr	Scenario: -		Build By-Fass
				E 03		v.	
Name:		* *	¢.		0	* * *	
		* * * * * * * * * * * * * * * * * * *	0	o.		* *	
*****	*****	* .	•	•		. * Name	*******
			•	· ·		• • • •	O
132		•	•	•			0 1079
							1079
[222]		•				•	[223]
•-	0	•					
136	0	• • • • •		•		•	748
	136			•	•	•	
*******	*****	÷.			•	*****	********
Name:	Cabot	* . *		132	: 0	• * • * 748 *	
		* *	1215		880	* * *	
		*		[230]		* Nam	e: Bridg

Traffic Simulation Model Turning Movement Summary

Community	Beverly						
Intersection:		Cabot at	Rantou!	L			
Year: 1985	Time Period	: AM Pea	k hr	Scenario:		Build H	By-Fass
			[67]				
Name: Cab	ot *				*		
	*	5 55		522	*		
	*				*		
	*				*		
	* 0	555	0		*		
	* .	•	•		. *		
	* .	•	•		. * Name		
******	**** .	•	•		. ****	*** * **	****
	•	•	•		• • • •	0	
	•	•	•				
225	•	•	•				^
225	•	•	•		• • • • • • •	0	0
•							
						0	
						v	
[93]							[0]
					•		
0							
	•						
524 0				•			C)
			•	•	•		
			•	•	•		
			•	•	•		
******	**** .		•	•	. ****	****	*****
	*		•	•	* *		
Name: Ranto	ա1 * .				* *		
	*		225	522	O *		
	*				*		
	*	1079		747	*		
	*	10/9		/4/	* Name	.	Cabot
	•		[223]		× Memi	•	Cabbe



B-2

1985

PM Peak Hour



Traffic Simulation Model Turning Movement Summary

Community	yı	Salem		_				
Intersect	tion:	F	ederal .	at Summer				
Year: 19	785 Time	Feriod:	FM Fe	ak hr	Scenario:		Build By-	-F'ass
				[72]				
Name:	Summer *		1386		1007	*		
	*		1000		1007	*		
	*					*		
	*			0		*		
	*		•	•		. * Name	: Fed	deral
*****	*******			•			*****	
		•	•	•		• • • •	289	
			•	•				
255			•	•			11	300
								•
							o	
		•						
[80]		•				•		* 4 0 0 1
r 801		•				•	'	[109]
	0							
		•						
0	0							0
					•	•	•	
				•	•	•		
******	O *******	•		•	•	*****	******	****
	*				•	. *		
Name:	Federal *	•		•		* *		
	*			3	718	U *		
	*					*		
	*		1145		721			
	*			C 713		* Name	: Su	ummer
				. /13				

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community		Salem 					
Intersection:		Summ	er at Br	idge St.			
Year: 1985	Time	Feriod:	FM Fea	k hr	Scenario:	B	uild By-Fass
Name:	ramp *			[221]		*	
Name:	ramp *		1551		1403	*	
	*					*	
	*	488	1063	O.		*	
	*	•	•	•		. *	
*****	*	•	•	•		. * Name:	Summer:
		•	•	•		•	5 30
		•	•	•			
488		•	•	•			0 530
							0
		•				•	
[60]		•				•	[59]
1 003		•				•	
	o						
		•					
322	0			•	•	•	133
				•	•	•	
	322	•		•	•	•	
******	******	•		•	•	. ******	*****
Name: S	Summer *	•			•	. *	
	*			0	873	133 *	
	*					*	
	*		1385		1006	*	
	*			[72]		* Name:	ramp
				L /23			

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community					
Intersection:	Bridge a	t North St	•		
Year: 1985 Time			Scenario:		Build By-Pass
Name: North St *	1568	[235]	1288	*	
* * *		16		* * *	
******	: :				::By-Fass of rp
	· :	· .		••••	0
0	•	•		• • • • • • •	0 0
					O
0	· ·			.•	[1023
····					
0 0	••••				1 33
0		•	•		
*	•		•	• **	**********
Name: * *		0	1288	* * 117 * *	
*	1552		1405		
*		[221]		* Name	: North St

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community	Salem			
Intersection	: E	ridge at ramp #1	2	
Year: 1985	Time Period:	FM Feak hr	Scenario:	Build By-Fass
Name:	*	r 03		
	* * *	0 0	0	* * *
*****	* . * . *******			. * Name: Bridge .*********
	·	· · · · · ·		0
693	•			693 1206
				513
[58]	······			. [18]
781	766	· ·		. B99
********	15	•	•	********
	* . Bridge * . *			. * . * 133 *
	* * *	528 [59]	133	* * Name: ramp #1

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community	Salem						
Intersectio		Bridge a	- t ramp #3	3			
Year: 1985						Build	By-Pass
			[0]				
Name:	*	O		0	* *		
	*				*		
	* 0	0	0		*		
	* .	•	•				Bridge
******	******		•		****	0	****
		•	٠.				
449	•	•	•		• • • • • • •	370	692
						322	
						022	
[148]	•				•		[58]
	o·				•		
375	375		•	•		-	7 64
	0				•		
*******	******		•	•	. ******	*****	*****
Name:	Bridge * .		79	•	. *		
	*		/7	U	409 * *		
	*	322		488	*		
	*		[60]		* Name	:	ramp #3

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

				,				
Community		Salem						
Intersecti	ons		Flint a	t Bridge				
Year: 198	35 Time	Period:	PM Fea	k hr	Scenario:		Build	By-Fass
				£4323				
Name:	Flint *			[132]		*		
	*		270		200	*		1
	*					* '		
	*	68	202	Q		*		
	*	•	•	•		. *		By-Pas
*******	~ *******							******
				•			0	
		•	•	•				
809		•					741	74
							0	
		•				•		
[146]						•		[22]
	104							1
563	459	• • • •		•	•	•	·	4!
	0			•	•	•		
*******	******	•		•	·	*****	****	*****
Name:	Bridge *	•				*		
	*			0	96	0 *		
	*					*		21
	*		202		96	*		
	*			[147]		* Name	:	Flit
				6477				

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Commun	ity:	Salem						
Inters	ection:	F'	roctor at	Boston				
Year:	1985 Time	Feriod:	FM Feak	hr	Scenario:		Build By	/-F'ass
				[146]				
Name:	Bridge *					*		
	*		809		565	*		
	*					*		
	*	65 8	151	O.		*		
	*	•		•		. *		
	*	•	•	•		. * Name		Boston
*****	*******	•	•	•		.*****	**************************************	****
		•	•	•		• • • •	Ü	
		•	•					
1162	•		•	•			504	657
							153	
							100	
[116]		•				•		[115]
	565	•				•		
	J0J							
1096	531	• • • •			•	•		531
				•	•	•		
	0			•	•	•		
*****	******	•		•	•	******	*****	****
	*			•	•	. *		
Name:	Boston *	•		•	•	. *		
	*			0	0	0 *		
	*					*		
	*		304		Q	*		
	*					* Name	F'r	roctor
				[152]				

Traffic Simulation Model Turning Movement Summary

Community:	Salem		_				
Intersection:	Bo	oston at	t Goodhu	2			
Year: 1985 Time	e Period:	FM Fe	ak hr	Scenario:		Build	By-Fass
Name - Caradh			[134]				
Name: Goodhue *	+	Ō		231	*		
*		0	O		*		
*	+ . + .	•			. * . * Name		Bosto
	•	•	•		.****	****** 231	******
930	•	•	•			930	116
•		·					
	•				• • • •	0	
[117]	•				•		E116
0	•				•		
1096 1096			•				109
			•	•		•	
O	•		•	:	· *****	*****	*****
Name: Boston				:	· *		
•			•		* *		
÷	÷ +	O		0	* * Name	?:	
			[03				

Traffic Simulation Model Turning Movement Summary

		80	ammar y			
Community	Salem					
Intersection:	Bridge at Br	ridge St.	. By-Fass			
Year: 1985	Time Feriod:	: PM Pe	ak hr	Scenario:	1	Build By-Fass
	_					
Name: By-Pass	T 150 14		[234]		*	
Name: by-rass	*	289		0	*	
	*				*	
	* * 289	0	0		*	
	* 207				. *	
	* .	•	•			By-Pass O.B.
**********	*****	•	•		******	**************************************
	•	•	·.			
	•	•	•			
739	•	•	•		• • • • • • •	0 0
						0
	•				•	
[227]	•				•	[228]
					•	
٠.	0					
•						
459 . 8	34		•	•	•	84
			•	•	•	•
ু জ	75		•	:	•	
*********	***** .		•	•	. ******	*******
Name: By-F	* . Pass * .		•	•	* * *	
reme. Ly i	*		450	Ō	0 *	
	*				*	
	*	375		450	*	
	*	070		100	* Name:	Bridge St
			[148]			

Traffic Simulation Model Turning Movement Summary

Communitys	Salem	·		
Intersections	By-Pass off r	 amp at North St.		
		FM Feak hr		Build By-Fass
Name: North		[103] 1359	1482	* * *
	* · · · · · · · · · · · · · · · · · · ·	1359 0		* * * * * * * * * * * * *
*****	*****			.*************************************
0				208
[0]	·····			. [2331
0	0	· ·	:	•
******	O ***** .		•	*************
Name:	* · * · *	•	1288	· * · * · * *
		1567 [235]	1288	* * Name: North St.

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community	Beverly				
Intersection:	By-Pa	ss at Bri	dge St.		
Year: 1985 Ti	me Feriod:	PM Peak	: hr	Scenario:	Build By-Fass
Name: By-Pass S.E.	* * * * * * * *	0	[232] O	695	* * * * * *
*****	* . ** .	•			. * Name: By-Pass
O		: :	· ·		695
					480
[229]	•				. [230]
0	•				•
218 218	• • • • •			•	. 1253
O	* * * .		•	•	. ************
Name: By-Pass N.B.	* . * . * * *		· •		. * . * 1035 * *
	*	480	[231]	1035	* * Name:Bridge St con

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community	Beverly			
Intersection		 Bridge at Cobo	Ł	
				n did no no
Year: 1985	lime Period:		Scenario: 	Build By-Fass
		E 03		
Name:	*			*
	*	0	0	* .
	*			*
	* Q	0 0		*
	* .	•	•	*
*****	* .	•		. * Name: Cabot
******	•	•		
	•			
	•			
104	•	•	• •	0 971
		•		971
	•			
	•			[223]
[222]	•		•	1223.
	0		•	
				- 1
204	0	•	•	. 115
		•	•	
	204	•		
*****	******	•		**********
Name:	* . Cabot * .	•		*
Name:	* .	104	0 115	51 *
	*			*
	*			*
	*	1175	1255	* Name Daid
	*	[230]		* Name: Bridg
		[250]		

Prepared by:ejb Date: 9/30/85

Traffic Simulation Model Turning Movement Summary

Community:	Beverly		_			
Intersections	C					
Year: 1985	Time Feriod:	FM Fe	ak hr	Scenario:		Build By-Fass
Name: Cab			[67]		*	
	*	540		713	*	
	* * 0 * .	540	. 0		* *	
,	* .	•	•		. * Name	2: ********
*****	****	•	•		. ****	**************************************
	•	•	•			
436	•	•	•		• • • • • • •	0 0
					••••	0
[93]	•				•	1 01
0						
431 0				•		. 0
431			•	:	•	
******			•	•	. *****	*****
Name: Ranto	*		436	713	· *	
	*				*	
	*	971		1149		0.1
	*		[223]		* Name	e: Cabot

Prepared by:ejb Date: 9/30/85



B-3

2005

AM Peak Hour



Traffic Simulation Model Turning Movement Summary

Community:	Salem				
Intersection:		Federal	at Summer		
	ime Ferio		PK HR	Scenario:	BUILD
Name: Summe	ır ¥		[72]		*
Name. Jumine	*	1154		9 39	* -Z
	*				*
	* * 251	903	Q		*
	* *	•	•		*
	* .		•		. * Name: Federal
********	*** .	•	•		.**************
			•		164
		•			
263	•	•	•		12 176
	•				•
[80]	•				. [107]
	•				•
0.	• • •				
0 0.			•		. o
			•	•	•
0.			•	•	
*******	*** ·		•	•	***********
N Films	* ·		•	•	* *
Name: Federa	1 * .		0	• 775	· *
	*		Ť	, , <u>-</u>	* .
	*	ni-			*
	*	9 03		775	* Name: Summer
	^		[71]		Guillet Guillet

Prepared by: EJB Date: 10-11-1985

Node Reference #: 96

Traffic Simulation Model Turning Movement Summary

Community:	9	Salem						
Intersection:		Summe	er at I	Bridge St.				
Year: 2005	Time F	Period:	AM	PK HR	Scenario:		BU:	ILD
				[221]				
Name: Nor	thst *	;	1679		1436	*	7	
	*	F- F- A	4405			*		
•	* *	554 •	1125			* . *	RAMP to/from Bi	ndge
******	*	•	•	•		. * Name .*****	: 	***
		•		•		••••	335	
5 54 -			•	•			0 !	556
							o	
[60]		•				•	C :	591
	0							
28	0							58
				•				
*****	28	_		•	:	• **** *	********	** *
	*	•		•	•	*		
Name: RAMP	mmer *	•		•	• 880	· * 58 *		
tolfrom Bridg	*			·		*		
	*		1157		938	*		
	*		1153		700	→ Name	: "	anp
				[72]				

Prepared by:EJB Date:10-11-1985

Nada Onlawanan 4. 07

Traffic Simulation Model Turning Movement Summary

Community:	Salem					
Intersection:	Bridge at	North St				
Year: 2005 Time	Period: AM P	K HR	Scenario:			BUILD
Name: North St * * *	1767	[235]	1227	4	//	,
*	0 1682	85		4		
Ť.	: :	•		. 1	Name:By	-Fase of PA
***************************************		•.		. •	· • • •	********* O
· ·	. :	•		• • • • •	•••	0 0
				•		O
0	•			•		[102]
\(\sigma_{\cdots} \sigma_{\cdots} \)	• • • •	•	· ·			255
**************	•	•	•		·******	*****
Name: *	·.		: 1227	210 4	* *	
*	1682		1437	4	*	N
*		[221]		•	- Name:	North St

Prepared by:EJB Date:10-11-1985

Nada Batanana H. 117

Traffic Simulation Model Turning Movement Summary

		·			
Community	Salem				
Intersection:	В	ridge at ramp #:	2		
Year: 2005	Time Period:	AM PK HR	Scenario:		BUILD
Name:	* * * *	0 0 0			,1
******	****			•	Bridge ******
51	·	· · · · · · · · · · · · · · · · · · ·		0	503
				552	
[58]	•••••			· ·	C 18:
740	737	· .			79
******	J ****** .	•	•	• *******	*****
Name: B	* . ridge * . * *	. 0	•	. * . * 58 *	
	* * *	555	58	* * * Name:	ramp #
		[59]			

Prepared by:EJB Date:10-11-1985

Blade Delevene 4. 105

Traffic Simulation Model Turning Movement Summary

Community:	Salem							
Intersection:	Br:	idge at r	amp #3					
Year: 2005 Time	e Feriod:	AM FK	HR	Scenario:				EUILD
Name:		° .	03			* * /		1
*********		•			<u>``</u> ;	* Name:	****	Bridge *****
183 .		· ·	· ·		• • • •		22	50
						• • • •	28	
[148]	· ·							[58]
345 345				: :				738
O	 * .		٠.	•		*****	****	*****
	* . * . *			•		* * *		
÷	* +	28		554		*		
•	•		603			* Name:		ramp #3

Prepared by: EJB Date: 10-11-1985

Made Malesses_4, (M)

Traffic Simulation Model Turning Movement Summary

			,			
Community:	Sal e	em				
Intersections		Flint	at Bridge			
Year: 2005	Time Feri	od: AM	PK HR	Scenario:		BUILD
				•		
			[132]			
Name:	Flint *				+	- 7
	*	257		86	*	
	*				* //	
,	* 13	125	O		*	
	* .	•	E		. *	Fu Fi
*******	* . ******	:	:		. * Name:	By-Fase *********
						0
	•	•	•			
420	•	•	•			288 298
740	.	•	•		• • • • • • •	200
						O
	•				•	
[146]	•				•	[227]
					•	
	12					
					•	
498	486			•	•	454
			•	•	•	
	0		•	•	•	
*****	****** .			•	. ******	******
Name : E	* .		•	•	. *	
Name: B	ridge * .		•	• 74	· · ·	- 4
	*				+	
	*				*	
	*	125		74	* Name:	Flint
	*		[147]		. INCHIE!	

Prepared by:EJB Date:10-11-1985

Traffic Simulation Model Turning Movement Summary

Community		Salem					
Intersection	on:	Pi	octor	at Boston	*		
Year: 2005	5 Time	Feriod:	AM	PK HR	Scenario:		EUILI
Name:	Bridge * * * * * *	7 3	421 242	[1 46] 86	498	* * * * * * * * * * * * * * * * * * * *	
	*	•	•	•		. * Name	
997		· · · · · · · · · · · · · · · · · · ·	:			•	**************************************
[116]						•	[115]
	478					·	
1102	604			· .	:		690
*********	0	•		•	•		******
****	*					• PARARA	* * * * * * * * * * * * * * * * * * *
Name:	Poston * * * *			0	:	* * * * * * * * * * * * *	
	*		519		0	-¥ -	F
Prenared hvil	*	+a,10-11-1	005	# The Boston intersection Boston St	St, Bridge St Was split into at Bridge S	* Name Goodhuc St Baston St. at Hand Proctor:	: Froctor : and Fractor St Goalhie St. and St.

Prepared by: EJB Date: 10-11-1985

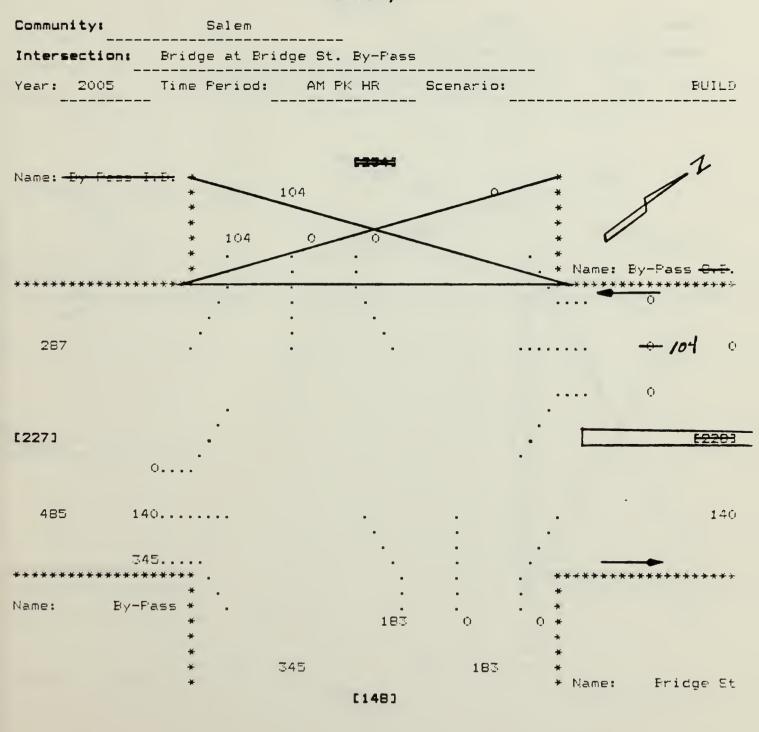
. Nada Delasanan #. ...

Traffic Simulation Model Turning Movement Summary

			oumm.	ary				
Commun	ity:	Salem						
Inters	ection:	B	oston at Go	odhue	*			
Year:	2005 Time	Feriod:	AM PK F	łF:	Scenario:			BUILD
_					-		N	
.	6		E 1	341		٠.		
Name:	Goodhue * * * *		0		96	* *		
	*	O	o.	o		*		
	*	•				· * Name		Poston
*****	******		•	•			****** 96	*****
901		•	•	٠.			901	997
							Q	
		•						
[117]		•				•		[116]
	0	•				•		
1103	1103			•				1103
	0	•		•	•	•		
****** Name:	************ * Boston * *			:		* * * * * * * * * * * * * * * * * * *	****	*****
	* *		0		6	* * * Name		
			C	O] + The Interse	Boston St, Bi ction was spli	ridge St., Gastin tinto Boeton Bridge St. and		ProctorSt.
Prepare	d by:EJB Da	te:10-11-1	985	and B	aton 5+, at	Cliffs 211 mg		

Nede Defended &. IAD

Traffic Simulation Model Turning Movement Summary



Prepared by: EJB Date: 10-11-1985

Mada Dalaranna &. 150

Traffic Simulation Model Turning Movement Summary

Community:	Salem	
Intersection:	By-Pass off ramp at North St.	
Year: 2005	Time Period: AM PK HR Scenario: EU	ILD
Name: North	St. * 1748 1778 * 0 1748 0 ** * * * * * * * * * * * *	
\	**************************************	frp *** 569
[01	o	33 :
**************************************	0 *********************************	* *
	* 1766 1227 * * Name: North [235]	St

Prepared by:EJB Date:10-11-1985

Hada Dalamana &. 110

Traffic Simulation Model Turning Movement Summary

Communitys	Beverly			
Intersection:	By-Pass	at Bridge St.		
Year: 2005	Time Feriod:	AM PK HR	Scenario:	BUILE
		[232]		
Name: Ey Fess G.	E+ *	0	676	*
	*			* = Z
	* 0			* . * Name: By-Pass
***********	**	· · · · · · · · · · · · · · · · · · ·		by-rass
				0.00
 676	•		•	-4676 1247
				571
:221	\Box .		•	. [230]
0.	• • • •			
435 429.			•	. E78
		•.	•	
*******	* * * * * * * * * .	•.	•	***********
Name: By-Fass N. B		:	•	*
	*	0	Q 4	149 * *
		577	449	* *
	*	[231]		* Name:Bridge St con

Prepared by:EJB Date:10-11-1985

Traffic Simulation Model Turning Movement Summary

Community	Beverly				- 1
Intersection		Bridge at C A bot			
Year: 2005	Time Feriod:	AM PK HR	Scenario:		BUILD
Name:	* * *	(0)		* *	
,	* 0	0 0		* * Name:	Cabot
*******	*****			**************************************	*****
131				0	1111
				1111	
[222]	·····			•	[223]
136	0	· ·	:		743
*******	136	•.		******	******
Name:	* . Cabot * . * *	: 131	0 74	* * 18 * *	
	*	1247	675	* Nama*	Erridae
	*	[230]		* Name:	Bridg€

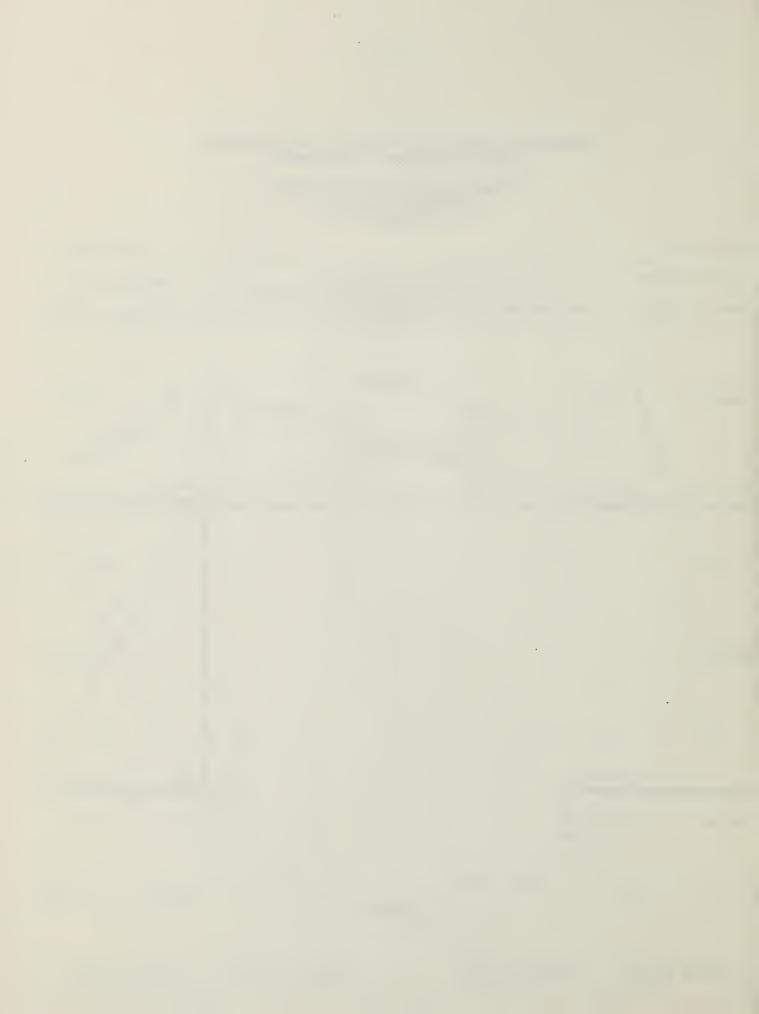
Prepared by: EJB Date: 10-11-1985

Mada Dalaranea 4. 15A

Traffic Simulation Model Turning Movement Summary

				,			
Commun	ity:	Beverly	/				
Inters	ection:		Cabot	 at Rantoul			
Year:	2005 Tin	me Perio	od: AM	PK HR	Scenario:		BUILI
				[67]			
Name:	Cabot	*				* ~	
		*	582		5 25	* \	
		*				*	
		*		_		*	1//
		* (0		*	
		* .	•	•		. *	
******	********	* .	•	•		· Name:	
****	*********	7.5	•	•		. 17	0
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				٠.			
221		•		•		\	0 / 0
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	,	•				•	\ /
		•				•	X
[-[93]		•				•	[0]
	0	•				•	/ \
	· · ·	• •					/ \
						/-	
527	Ó						\ 0
02,	,			•		.1 /	\ `
		•		•		. /	\
	527					. /	\
*****	*****	** .		•	•	. ******	******
		* .		•	•	. 4	
Name:	Rantoul			•	•	. *	
		*		221	525	0 *	
		*				*	
		*	1100		70/	*	
		*	1109		746	* N. blamma	C-1-1
		*		[223]		* Name:	Cabot
				12231			

Prepared by:EJB Date:10-11-1985



B-4

2005

PM Peak Hour



Traffic Simulation Model Turning Movement Summary

Commun	ityı	Salem					
Inters	ection:	F	ederal	at Summer			
Year:	2005 Time	Period:	PM	PK HR	Scenario:		BUILD
Name:	Summer * * * * *	242	1384	C 723	1068	* * * *	Z
◇ —	ONE-WAY *		•	•		. * Name: F	Federal
256			•	·		318 11	<u> </u>
[80]		•				•	[107]
	0	•				•	
· ·	0			•	· ·	·	O
*****	0 ********			•	•	**************************************	*****
Name:	Federal * · * * * * * * * *			· ·	: 750	. * ONE-	w.q
	*		1142		753	* * * Name:	Summer
	*			[713		* HEME	Oct.inite i

Prepared by:EJB Date:10-11-1985

Node Reference #: 96

Traffic Simulation Model Turning Movement Summary

Communitys	Sal	lem			
Intersection:		Summer at 1	Bridge St.		
Year: 2005	Time Fer	riod: FM	PK HR	Scenario:	BUILD
					7
Name: NorthSt.			[221]		
Name: Norn2+	ronp * *	1489		1512	*
	*				*
	* *	434 1055	0 `		. * RAMP tolfrom Bridges
	*	•	•		* Name: Summa
*******	* ******	•	•		576
	•	•	•		
434	•	•	•		0 576
					0
[60] -	•				. [59]
	0				•
330	0	•		•	. 129
-	30		•	•	
********			•	•	************
Name: RAMP 5	mmer *	•	•	•	*
to I from Bride	* . K	•	O	9 36	129 *
	* *	1385		1065	*
	*		[72]		* Name: North St
			6 / 2 3		

Prepared by:EJB Date:10-11-1985

Traffic Simulation Model Turning Movement Summary

Community:	Salem		
Intersection:	Bridge at North St		
	Period: PM PK HR		BUILD
Name: North St * *	[235] 1506	1402	* * *
***************************************	0 1489 17		* * * Name: By-Pass + : p **********************************
[0]	•		0 0
· · · · · · · · · · · · · · · · · · ·	····		. 128
Name: * * * * *	1489	1402 111	* *
*	[221]	1313	* Name: North St

Prepared by: EJB Date: 10-11-1985

Traffic Simulation Model Turning Movement Summary

Community:	Salem					
Intersecti	oni	Bridge at ra	amp #2			
Year: 200	5 Time Period			enario:	_	BUILD
Name:	* * * *	0	03			1
******	*	:			* Name:	Bridge ********
726	•		•		7	00000000000000000000000000000000000000
[58]	·····					[18]
742	727	,		•		8 56
	15 ********* * . Bridge * . * *	57 <i>6</i>			******** * 129 * * *	*****
	*		593		* Name:	ramp #1
		_				

Prepared by:EJB Date:10-11-1985

Traffic Simulation Model Turning Movement Summary

Community:	Salem		_					
Intersection:		Bridge a	t ramp #3					
Year: 2005	Time Feriod	: FM	PK HR	Scenario:				BUILD
Name:	* * * * * * * * * * * * * * * * * * * *	0	. O1		·	* * * * * * * * * * * * * * * * * * * *	8	1
******	****	•	•		<u> </u>	* Name	*****	Bridge ≿xxxx
479			·. ·.		••••	• • • •	0 396	726
							330	
[148]					•	•		[58]
	0							
	0		· ·	· ·	•	•		742
******			•	•	•	*****	*****	****
·Name: Bri	* . .dge * . * *	330	83	: o 433	350	* * * * * * *		
	*		[60]			* Name	:	ramp f3

Prepared by:EJB Date:10-11-1985

Traffic Simulation Model Turning Movement Summary

Community:	S	Salem								
Intersection	11		Flint	at	Bridge					- 1
Year: 2005	Time f	eriod:	F'M	PK	HR	Scenario:				PUILD
					132]					
Name:	Flint *		271			195		*	_	2
	*		-/-			1,0		*		
	*	70	201		0			* //		
	*	:	:	:			٠.	* Name:		By-Pass
********	*****		•					******	***** O	****
		•	•		•			• • • •	Ċ.	
⁷ 855			•		•				785	785
								• • • •	0	
							•	•		
[146]		•								[227]
	99						•			
574 	475	• • •			•	•		•		475
•	0				•	•				- 1
******	*******	•			•	•	•	******	*****	*****
Name:	Bridge *	•			•	•		*		
	*				0	96	0	*		- 9
	*		201			96		*		7
	*		201			70		* Name:		Flint
				1	1473					

Prepared by:EJB Date:10-11-1985

Traffic Simulation Model Turning Movement Summary

Соммил			Salem							
Inters			Fi	roctor	at	Boston	*			
Year:	2005 Ti									BUILD
					1	146]			7	
Name:	Bridge	*				1401			*	
		*		855			574		*	
	•	*							* \\	
		*	699			O			* \'	7
		*		•	1	•		٠.		Boston
****	******	**	•	•		•				*******
						•				Q
			•	•		•			_	
1246		•		•		•		• • •	54	700
			,						4 8	- -
									15	3.24
51113										24453
[116]			•							[115]
	574	• •								
1112	538	• • •	• • • •			•	•		•	538
						•	:		•	
	0		•			•		•		
****	******	**					•		*	*****
Name:	Poston	*	•			:			*	
		*				0	0	Õ	*	
		*							*	
		*		309			0		* Name:	Proctor
						1523				
	•				4	The Bo	stanSt. Bride	e St	, Goodhuc St a	nd Proctor St. Omdine St or St.
						intersect	on was split	into	Boston St. at	Goodhuc St
Prepare	d by: EJB	Dat	10-11-1	985		מדכסם בחג	mot at pric	يود ت	or, and FIOCT	
Node Re	ference #: 110									

Traffic Simulation Model Turning Movement Summary

Communi	ty:	Salem					
Interse			ston a	t Goodhue	*		
Year: 2	2005 Time	Feriod:	FM I	PK HR	Scenario:		BUILD
Name:	Goodhue *	_		[134]	•	N	
Name:	* * * * * * * * * * * * * * * * * * *	_	0	0	237	* * * * * * * * * * * * * * * * * * * *	
******	* ***********	. : . ·	· ·	: ·.		. * Name: .************* 237	Boston *****
1008			:	•.		1008	1245
[117]	0	· ·					[116]
	0			· ·	: : :	.:	1113
**************************************	************ Poston * * * *	· ·	0	[0]		* * * * * * * * * * * * * * * * * * *	*****
Prepared Node Refe	by:EJB Da	te:10-11-19	85	* TI inte Goo	ne Boston St, resection was : I have St, an other St	BridgeSt, GoodhueSt, au Split into Boston St. & Boston St. at Bridge	nd Proctor . a t eSt, and

Traffic Simulation Model Turning Movement Summary

Community:	Salem				
Intersection:	Bridge at Brid	dge St.	By-Pass		
Year: 2005	Time Feriod:	FM PI	< HR	Scenario:	BAILD
			£2544		1
Name: Dy Fass	I.B. *	504	12043		
	* * * 304	0	><		*
	*		: ` `		. * * Name: By-Pass D.E .
*******	****				************
			•		
784		:	•.		30t 0
					0
[227]	•				· F2201
	0				•
474	82				. B2
-			•	:	
3	92			•	
******	*****		•	•	************
Name: By-	* . Fass * .		•	•	• * - *
· ·	+		480		· · ·
	*				*
	*			450	*
	* 3	392		480	* '* Name: Bridge St
	•		[148]		. Nemes Diride as

Prepared by:EJB Date:10-11-1985

Traffic Simulation Model Turning Movement Summary

Community:	Salem		
Intersection: By-Fa	ss off ramp at North St		
Year: 2005 Time	Period: FM PK HR	Scenario:	PUILD
Name: North St. *			* 1
*	1292	1605	*
*	0 1292 0		* /
*			*
******			. * Name:By-Pass offrp
			203
/ \			0 117
\	•	•••	0 417
\ /			214
	•		
CO 1	•	•	[233]
/ \ 0	•	•	
/o \o		•	
	•	•	
0.1.			******
Y			*
Name: *	•	1402	* 0 *
*			*
*	1506	1402	* * Name: North St.
*	[235]		* Name: North St.

Prepared by: EJB Date: 10-11-1985

Traffic Simulation Model Turning Movement Summary

Community:	Beverly			
Intersection:	By-Fass	at Bridge St		
Year: 2005	Time Feriod: -	FM FK HR	Scenario:	BUILD
Name: Dy Pass	2.E . *	[232]		*
	*	0	724	*
	* 0	0 0		*
	* .			* Name: By-Pass
*******	****			···· 724
721				- 4 724 1234
-	•		• •	————————————————————————————————
				510
E				
	·····		•	[230]
	····			
211 2	11	•	•	. 1266
	0	·.		•
*******		:	: :	******
Name: By-Fass	N.B. * .		0 105	* 5 *
	*	Ŭ	7 100	*
		510	1055	* * Name:Bridge St con
	*	[231]		- Name: bridge at con

Prepared by: EJB Date: 10-11-1985

Node Reference #: 162

Traffic Simulation Model Turning Movement Summary

Community:	Beverly						
Intersection:		Bridge at	C≜bot				
Year: 2005	Time Period	: PM PK H	łr: S	cenario:			BUILD
Name:	* * * *	0	01		• • • • • • • • • • • • • • • • • • •	1	
	*	:			· ;	← Name:	<u>V</u> Catot
*********	****						********** O
, 107	·	:	•		• • • • •		0 1007
						10	007
[222]	····						[223]
228	0			:			1155
	28		•	•	•		
*****	* .		•	•	•	************	****
Name: C	abot * .		107	• 0	1159 -	¥ ¥-	
	* *	1075	• • •		4	⊬ *	
	*	1235 E :	230]	1266		* * Name:	Bridge

Prepared by: EJB Date: 10-11-1985

Traffic Simulation Model Turning Movement Summary

Community:	Beverly				
Intersection	11	Cabot at	Rantoul		
Year: 2005	Time Feriod	: PM P			
Name:	Cabot * * * *	565	[67]	715	* * * * * * * * * * * * * * * * * * *
****	* O * . * .	565 • •	•		. * Name:
443	· · ·	· · ·	· ·		
[93]	•				r 03
441	0			:	
*******	441		•		
Name: F	* . (antoul * . * * *		44호 -	; 715	* * * * * * * * * * * * * * * * * * *
	*	1006	[223]	1158	* Name: Cabot

Prepared by:EJB Date:10-11-1985

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